

An Individualized Pediatric Primary Care Report Card to Assess and Improve the Quality of Preventive Services

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Too little is known about how to assess the quality of care that children receive as part of preventive health services. Only immunization status is routinely reported - how often children are screened for primary care problems (e.g. iron deficiency or lead poisoning), have growth patterns assessed, or are provided with anticipatory guidance is unknown. Furthermore, too little is known about how to effectively identify and recall children found to have primary care deficiencies. Computer technology now offers easy and affordable ways to gather the information needed for quality assessment. Once available, this information will be used to improve health outcomes through improved quality of delivered services.

We have developed the Boston City Hospital (BCH) Automated Record for Child Health (ARCH) using *PowerBuilder* for *Windows*. The system is user-friendly, inexpensive, and has been specifically designed for use in the pediatric primary care center at BCH. The ARCH uses structured encounter forms (SEF), and is pen-based. Pen palettes located in each examining room will be used by clinicians to gather 1) numeric data through optical character recognition (OCR); 2) answers to age-specific interim history questions; 3) answers to developmental and behavioral screening questions; 4) results of physical examination; 5) immunizations given; 6) lab tests ordered; 7) visit diagnoses; and 8) requested follow-up visits. Clinicians will record anticipatory guidance topics discussed and print topics at the close of each visit.

The data collected will be used to generate an individualized pediatric "report card" at the end of each visit which will include an immunization record, growth chart, results of recent screening tests, and problem list. Anticipatory guidance will be available in multiple languages.

The system database will be used to: 1) assess the current quality of preventive services; 2) identify primary care deficiencies and evaluate methods for patient recall; 3) evaluate changes in quality following use of the report card; 4) and to conduct several randomized trials of anticipatory guidance presented in graphical, text, and verbal format.

Improved medical informatics is especially important in primary care centers serving poor urban children because the morbidity from primary care problems (e.g. iron deficiency anemia, lead poisoning, underimmunization, and developmental delay) is extremely high and current approaches to reducing the problems are inadequate. The health of children living in U.S. cities is not good. We are not likely to meet many of the objectives of the Healthy People 2000. This project is an attempt to improve the quality of care that children receive as part of routine health care services using pen-based information technology. In this presentation, we will describe the ARCH and report on preliminary results.